

June 7, 2004

Mr. Jack R. Strosnider, Director
Office of Nuclear Material Safety
and Safeguards
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Dear Mr. Strosnider:

I am writing in response to Martin Virgilio's letter of March 5, 2004, regarding the Connecticut Yankee Atomic Power Company's Haddam Neck site (Haddam Neck). The March 5 letter notified EPA that the Haddam Neck site would have triggered an NRC consultation with EPA in accordance with the 2002 Memorandum of Understanding (MOU) entitled: ["Consultation and Finality on Decommissioning and Decontamination of Contaminated Sites"](#) (OSWER No. 9295.8-06, signed by EPA on September 6, 2002, and NRC on October 9, 2002). This letter responds to the notification in accordance with Section V.D.1 of the MOU, when NRC requests EPA's consultation on a decommissioning plan or a license termination plan, EPA is obligated to provide written notification of its views within 90 days of NRC's notice.

Mr. Virgilio's letter does not constitute a Level 1 consultation as specified in the MOU because a License Termination Plan (LTP) had already been issued for the site. NRC initiated the consultation on this site in the spirit of the MOU. EPA is providing its views in a manner equivalent to what we expect to provide for in future Level 1 consultations, similarly, in keeping with the spirit of the MOU.

The views expressed by EPA in this letter regarding NRC's decommissioning are limited to discussions related to the MOU. The comments provided here do not constitute guidance related to the cleanup of sites under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) authority.¹ EPA's views on the matters addressed by this letter were developed from information furnished by NRC in the March 5 letter, other materials provided by NRC, and staff discussions.

EPA Consultation Views

Today's response is limited to those matters that initiated NRC's request for consultation in its letter of March 5. NRC initiated this consultation because the derived concentration guideline levels (DCGLs) in the License Termination Plan (LTP) exceed the MOU trigger values for 15 radionuclides for either soil and/or groundwater. It is EPA's understanding that DCGLs

¹Please see the memorandum entitled: "Distribution of Memorandum of Understanding between EPA and the Nuclear Regulatory Commission" (OSWER No. 9295.8-06a, October 9, 2002) which includes guidance to the EPA Regions to facilitate Regional compliance with the MOU and to clarify that the MOU does not affect CERCLA actions that do not involve NRC (e.g., the MOU does not establish cleanup levels for CERCLA sites). This memorandum may be found on the Internet at: <http://www.epa.gov/superfund/resources/radiation/pdf/transmou2fin.pdf>.

are generally developed for all radionuclides that a licensee was permitted by NRC to use. It is also our understanding that many of these radionuclides may not be present in the media (soil and groundwater) discussed in this letter, and that the remediation activities associated with NRC's decommissioning process are likely to significantly decrease below the DCGLs the residual levels of those radionuclides that are present.

Soil: Land use

NRC triggered the consultation for soil on the basis of DCGLs for 5 radionuclides in the LTP exceeding the residential Table 1 values in the MOU. Table 1 contains trigger values for both residential and industrial/commercial land use. It is EPA's understanding that the future land use for portions of this site with significant soil contamination are likely to continue to be industrial use after NRC decommissions. At CERCLA sites, EPA generally uses the guidance "Land Use in the CERCLA Remedy Selection Process" (OSWER Directive No. 9355.7-04, May 25, 1995) to determine what is a reasonably anticipated land use. This guidance document may be found on the Internet at: <http://www.epa.gov/superfund/resources/landuse.pdf>.

As your letter states, NRC is planning to release the site for unrestricted use. In EPA's view NRC should consider determining if the reasonably anticipated land use for the site is industrial/commercial. If the future use of the site is reasonably anticipated to be industrial, rather than residential, it is more likely that the site will not exceed Table 1 trigger values in accordance with that land use.² Ensuring continuance of a restricted land use, such as industrial, however, is likely to involve the use of institutional controls. For further information regarding how EPA selects institutional controls, see "Institutional Controls: A Site Manager's Guide to Identifying, Evaluating and Selecting Institutional Controls at Superfund and RCRA Corrective Action Cleanups" (OSWER Directive 9355.0-74FS-P, September 2000). This guidance document may be found on the Internet at: <http://www.epa.gov/superfund/action/ic/guide/guide.pdf>.

Soil: Modeling

The five radionuclides with Table 1 soil values in the MOU that NRC's DCGLs exceed at this site are based on a 1×10^{-4} cancer risk, developed using an electronic calculator entitled: "Radionuclide Preliminary Remediation Goals (PRGs) for Superfund." This calculator generates PRG concentrations at the 1×10^{-6} risk level. The PRG value at 1×10^{-6} was multiplied by 100 to derive the 1×10^{-4} value for Table 1 consultation triggers. (At CERCLA sites, PRGs based on cancer risk should continue to be developed at the 1×10^{-6} level.) The soil concentration values were developed using conservative default parameters. At most sites, higher soil concentrations corresponding to a given risk level may generally be justified using site-specific parameters. The radionuclide PRG calculation tool may be found on the Internet at: <http://epa-prgs.ornl.gov/radionuclides/>.

In EPA's view, NRC should consider determining if the use of site-specific parameters

²Please note that in accordance with Section 121(c) of CERCLA EPA, when remediating a site for an industrial/commercial land use, is also likely to review the site for continued protectiveness at least every five years.

were justified in modeling at this site. The use of site-specific parameters would not alter NRC's obligation to possibly trigger a future Level 2 consultation, if Table 1 soil values were found to be exceeded after the Final Status Survey (FSS). However, during a potential Level 2 consultation, if NRC is able to furnish such site-specific parameters and their rationale for allowing their use during the dose assessment for the site, such information may facilitate EPA offering its views with a more accurate estimate of the risks posed by residual contamination at the site.

Ground water:

NRC triggered the consultation for groundwater on the basis of DCGLs for 14 radionuclides in the LTP exceeding Maximum Contaminant Levels (MCLs) under the Safe Drinking Water Act. It is EPA's understanding that NRC is planning to first implement a source control remediation strategy that may also address groundwater contamination. At CERCLA sites, EPA often uses such a phased approach for remediating groundwater. In addition to source control, EPA may employ active remediation measures (e.g., pump and treat), passive remediation measures (e.g., monitored natural attenuation), as well as evaluating the potential applicability of program flexibilities (e.g., alternate concentration limits, technical impracticability waivers, or aquifer classification exemptions) under EPA's phased approach to addressing groundwater contamination. At CERCLA sites, EPA often uses the guidance "Presumptive Response Strategy and Ex-Situ Treatment Technologies for Contaminated Ground Water at CERCLA Sites, Final Guidance," (OSWER Directive 9283.1-12, October 1996) to implement its phased approach. This guidance document may be found on the Internet at: <http://www.epa.gov/superfund/resources/gwguide/index.htm>.

In EPA's view, a strategy should be developed for the remaining ground water contamination in the event the planned source control remedy does not reduce contamination in ground water to MCLs. While conducting a ground water response action, EPA would typically encourage State or local governments to implement use controls to prevent well drilling or drinking the ground water with contamination above the MCLs. In some cases, EPA may provide an alternative drinking water source.

NRC should also be aware that EPA has available certain program flexibilities in addressing contaminated ground water under CERCLA. An example potentially relevant to the Haddam Neck site, is when a facility is adjacent to a surface water body, EPA may establish Alternate Concentration Limits (ACLs) (defined under section 121(d)(2)(B)(ii) of CERCLA) as applicable standards *in lieu* of MCLs. The circumstances under which ACLs may be established at CERCLA sites are summarized as follows:

1. The contaminated ground water must have "known or projected" points of entry to a surface water body;
2. There must be no "statistically significant increases" of contaminant concentrations in the surface water body at those points of entry, or at points downstream; and
3. It must be possible to reliably prevent human exposure to the contaminated

ground water through the use of institutional controls.

At CERCLA sites, ACLs may be used in lieu of the MCL provided that the above criteria is met and supported by site-specific information.

Conclusion

EPA staff will remain available to NRC for consultation as further plans are developed for needed remediation at the site. If you have any questions regarding this letter, please contact Stuart Walker of my staff at (703) 603-8748.

Sincerely,

/s/ mbc

Michael B. Cook, Director
Office of Superfund Remediation and
Technology Innovation